From: Theresa McGarry
To: Elizabeth Barr; Jennifer Valenzia
Date: 5/10/05 12:57:51 PM
Subject: DTSC Comments on ASR for the year 2004

Please see comments from our Geological Unit attached.

Theresa McGarry
Project Manager
DTSC

916-255-3664

CC: Laurent Meiller; Stewart Black

From: Stewart Black
To: Theresa McGarry
Date: 3/18/05 4:05:08 PM
Subject: Comments on The Annual Site Status Report for Former UST Site 957/970 at DoD Housing Facility Novato

Theresa,
GSU has reviewed the document titled *Annual Site Status Report (for the year 2004) for Former UST Site 957/970 at Department of Defense Housing Facility Novato, California* (Annual Report). The Annual Report was prepared by Battelle for the Naval Facilities Engineering Command and is dated January 2005. GSU has also reviewed comments on the Annual Report prepared by the RWQCB and issued to the Navy in a letter dated March 16, 2005. We have the following comments:

Comment 1: The GSU has reviewed the RWQCB comments on the Annual Report contained in the letter dated March 16, 2005. We concur the technical comments contained in that in letter.

Comment 2: The data provided in the Annual report continues to support the theory that MtBE in groundwater is migrating off the site and that the down gradient portion of the MtBE plume in groundwater has not stabilized and continues to expand to the north.

To prevent additional impact on the groundwater at the site additional remediation alternatives should be evaluated and implemented as soon as possible.

Comment 3: The data contained in the Annual Report should be used to determine the location for additional groundwater monitoring points that will be used to evaluate plume migration at the leading edge of the plume. This information can be added to the Annual Report or can be provided in future planning documents for the site.

Comment 4: It is clear that groundwater flows through the weathered and fractured bedrock which underlies the site. It is also clear that MtBE has impacted the groundwater flowing through the bedrock portion of the aquifer.

To date an accurate three dimensional view of the MtBE and BTEX plume has not been prepared and evaluated. This three dimensional evaluation should include all of the new groundwater quality data, groundwater flow data and lithologic data collected from the bedrock portion of the aquifer.

At a minimum a series of cross-sections should be prepared to define the areal and vertical extent of the plume. These cross-sections should be prepared so that they run down the access of the plume and at right angles to the plume. Both the alluvial portion of the plume and the bedrock portion of the plume should be shown on these cross-sections. The potential for preferential flow pathways should also be evaluated.

Comment 5: The annual report contains a discussion of natural attenuation parameters. However, there are two critical parameters which must be proven before monitored natural attenuation can be included as a viable remediation option. The first is plume stability. The second is that the plume must be fully characterized (defined) both horizontally and vertically.

To date the MtBE plume has not been proven to be stabile. In fact historical data shows that both the higher concentration portion of the plume (to the south) and the leading edge of the plume (to the north) is migrating down gradient.

The groundwater plume has also not been fully characterized in three dimensions. There is very little information on the vertical extent of the contaminant plume in the bedrock portion of the aquifer and groundwater flow direction and velocity through the weathered and fractured has not been fully evaluated.

Prior to selection of a final remedial option for groundwater at the site each of these parameters should be

fully addressed.

Feel free to call me if you have any questions.

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From: Stewart Black
To: Theresa McGarry
Date: 5/5/05 9:36:19 AM
Subject: DoD, Novato, Navy Responst to Regulatory Comments, Annual Site Status Report (for the year 2004)

I have reviewed the Navy Response to regulatory comments on the subject document, dated 26 April 2005. I have the following general comments:

1. The cross-sections provided by the Navy do not provide any information about containment concentrations that are known to be present in the bedrock portion of the aquifer. Many of the wells selected for these cross-sections appear to be located outside of the plume boundary and wells that are located within the plume do not show analytical data . As such the cross-sections do not provide any information about the vertical extent of contamination or plume migration through the weathered bedrock portion of the aquifer.

GSU recommends that the Navy prepare a cross-section which runs down the excess of the MtBE plume (north-south) from the source to the toe of the plume. The cross-section should include wells completed in alluvium, weathered bedrock and competent bedrock. Wells MW-9A, MW 3D should be included in the cross-section since they have the highest MtBE concentrations.

The cross-sectional view should include analytical data to define a vertical profile of the plume. Colors, contours or numbers may be used to show contaminant concentrations in the aquifer from top to bottom and to demonstrate and the Navy's conceptual model for contaminant flow through the alluvial and the bedrock portion of the aquifer.

2. The Navy theory that decreasing concentrations of MtBE in the higher concentration portion of the plume has merit. However, a drop in the containment concentration of near source wells by itself is not definitive evidence that a plume is stable.

The fact that the containment plume appears to be migration down gradient (spreading) at the toe of the plume and that plume migration through the bedrock portion of the aquifer has not been fully characterized is a concern to GSU. Until these outstanding issues have been addressed the Navy will not be able to prove if the decrease in MtBE concentration we are seeing is a result of the biosparging and plume stability or if it is due to containment migration down gradient and/or containment migration through the bedrock portion of the aquifer.

The Navy has indicated that they will address many of the states comments in future reports. GSU looks forward to seeing these reports very soon.

If you have any questions feel free to contact me - SB

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